

REMARKS/ARGUMENTS

The Office Action mailed June 18, 2004 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested. Applicants have elected group II, claims 13-25 for examination in this application. The non-elected claims are group I, claims 1-12 and group III, claims 26-34. Claims 1-12 and 26-34 stand withdrawn subject to Applicants right to file divisional applications covering the inventions of claims 1-12 and 26-34. The claims presented for examination in this application are claims 13-25.

35 USC 102 Rejection

In numbered paragraph 3 of the Office Action mailed June 18, 2004, claims 13-18 and 21 were rejected under 35 USC 102(b) as being anticipated by the Inagawa et al (U.S. 5,166,493) reference. Applicants have amended the single independent claim 13.

Applicants amended independent claim 13 provides that "said step of directing said first high power percussive laser beam at said material to remove the bulk of said material to form a ragged hole being stopped before said ragged hole reaches said back side and before said ragged hole reaches said second material thereby leaving a thin membrane of said material between said ragged hole and said second material." This is supported in Applicants original specification which provides the following description on page 19 beginning at line 21 and continuing to page 20, line 13:

"Referring to FIGS. 5, 6, 7, and 8 the process by which a thin membrane 25 is left at the bottom of the hole 20 is shown. The infrared laser beam 22 can remove almost all of the interior of the hole 20 leaving only a thin membrane 25 at the bottom. The lower power short wavelength laser beam 23 can then trepan the hole cleaning up the edge and removing the membrane 25 at the same

time thereby reducing the amount of laser light which exits the hole 20. In some industrial applications, there are critical elements behind the hole 20 which cannot be exposed to high power laser light. FIG. 5 illustrates the beginning of the process of drilling of the hole 20. FIG. 6 illustrates an intermediate step in the drilling of a hole leaving a membrane 25 at the bottom of the hole 20 to reduce transmitted laser energy. FIG. 7 illustrates an intermediate step in the drilling of the hole 20. FIG. 8 illustrates the final step in the drilling of hole 10.

After drilling by the percussive laser, the trepanning laser then cleans up the sides of the hole before breaking through the membrane 25."

Applicants respectfully traverse the rejection of claims 13-18 and 21 under 35 USC 102(b). Applicants submit that the Inagawa et al reference does not show a number of steps of Applicants' amended claims 13-18 and 21. As stated in Verdegaal Bros. v. Union Oil Co. of California, 814 F.2<sup>nd</sup> 628, 631 USPQ 1051, 1053 (Fed. Cir. 1987), "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference."

Elements of Applicants' rejected claims 13, 19, and 21-25 that are not shown by the Inagawa et al reference include the following:

"directing said first high power percussive laser beam at said material to remove the bulk of said material to form a ragged hole having a diameter slightly smaller than said final diameter of said hole, said step of directing said first high power percussive laser beam at said material to remove the bulk of said material to form a ragged hole being accomplished by using said first high power percussive laser beam spot diameter to directly form said ragged hole without trepanning, said step of directing said first high power percussive laser beam at said material to remove the bulk of said material to form a ragged hole being stopped before said ragged hole reaches said back side and before said ragged hole reaches said second material thereby leaving a thin membrane of said material between said ragged hole and said second material," or

“said step of generating a second laser beam comprising generating a second and trepanning laser beam that has less power than said first laser beam, said second and trepanning laser beam producing a second level of power that is less than said first level of power and said second and trepanning laser beam having a spot diameter substantially smaller than said diameter of said hole,” or

“directing and trepanning by tracing said second and trepanning laser beam along said diameter and at said hole being formed for expanding said ragged hole having a diameter slightly smaller than said final diameter of said hole so that said hole is at said final diameter and for accurately cleaning up said ragged hole so that said final hole has said final diameter and has dimensions of high precision and directing and trepanning said second and trepanning laser beam through said thin membrane of said material so that said final hole extends to said second material.”

Since steps of the claims now presented for examination are not shown by the Inagawa et al reference, the rejection is unsupported by the art and should be withdrawn.

#### 35 USC 103 Rejection

In numbered paragraph 6 of the Office Action mailed June 18, 2004, claims 19, 20, and 22-25 were rejected under 35 USC 103(a) as allegedly being unpatentable over the Inagawa et al reference in view of the Durham reference (U.S. 6,070,813). Applicants have amended the single independent claim 13 and respectfully traverse the rejection of Applicants' dependent claims 19, 20, and 22-25 under 35 USC 103(a).

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) include “Ascertaining the differences between the prior art and the claims at issue.” The Inagawa et al reference fails to disclose a number of steps of the invention defined by Applicants' amended

claims. As explained above in connection with the 35 USC 102(b) rejection there are a number of steps of Applicants' invention that are not shown in the Inagawa et al reference. The missing steps are listed above.

There is no possible obvious combination of the Inagawa et al and Durham references that would produce Applicants' claimed invention. There is no teaching or suggestion in the references to form an obvious combination. The cited references do not provide a teaching of Applicants' claimed combination of steps.

SUMMARY

The undersigned respectfully submits that in view of the foregoing amendments and the remarks, the rejections of the claims raised in the Office Action dated June 18, 2004 have been fully addressed and overcome. The present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



Eddie E. Scott  
Attorney for Applicant  
Registration No. 25,220  
Tel. No. (925) 424-6897

Livermore, California

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